9. (New) A method for detecting CDMA-coded signals $\underline{d} = (\underline{d}^{(1)}, ..., \underline{d}^{(K)})$, where $\underline{d}^{(k)} = (\underline{d}_1^{(k)}, ..., \underline{d}_M^{(k)})$, $k = 1, ..., K$, comprising the steps of:

determining a first detection solution $\hat{\underline{d}}(1)$ of CDMA-coded signals $\underline{d}$;

determining an (n+1)-th detection solution $\hat{\underline{d}}(n+1)$ for n = 1, ..., N as a function of the n-th detection solution $\hat{\underline{d}}(n)$ by assigning

$$\hat{\underline{d}}(n+1) = f\left(\hat{\underline{d}}(n)\right)$$

where iteration for $n \to \infty$ converges toward multiuser solution $\hat{\underline{d}}_{MU}$ corresponding to

$$f\left(\hat{\underline{d}}(n)\right) \xrightarrow[n\to\infty]{} \hat{\underline{d}}_{MU},$$

if a quality of approximation solution $\hat{\underline{d}}(n+1)$ is not sufficient, assigning $n \to n+1$ and continuing performing the step of determining the (n+1)-th detection solution ;

if the quality of approximate solution $\hat{\underline{d}}(n+1)$ is sufficient, terminating the method and using $\hat{\underline{d}}(n+1)$ as an estimate of data $\underline{d}$ to be detected, wherein:

the function of the step of determining the (n+1)-th detection solution is given by

$$f\left(\hat{\underline{d}}\right) = \hat{\underline{d}} + \delta \cdot \underline{g}$$

with

$$\delta = \frac{\|g\|^2}{\|A \cdot g\|^2} \quad \textbf{and} \quad \underline{g}^T = A^H \cdot (\underline{s}^T - A \cdot \hat{\underline{d}}^T)$$

where matrix A is given by

$$A = \begin{bmatrix} b^{(1)}{}_1 & 0 & \cdots & \\ \vdots & \vdots & & \\ b^{(1))}{}_Q & 0 & & \vdots \\ \vdots & b^{(1)}{}_1 & & \\ b^{(1)}{}_{Q+W-1} & \vdots & & 0 \\ 0 & b^{(1)}{}_{Q+W-1} & & b^{(K)}{}_1 \\ \vdots & \vdots & & \vdots \\ 0 & 0 & \cdots & b^{(k)}{}_{Q+W-1} \end{bmatrix}$$

with $\underline{b}^{(k)} = \underline{c}^{(k)} * \underline{h}^{(k)}$,

where $\underline{c}^{(k)}$ denotes the K different codes and $\underline{h}^{(k)}$ denotes pulse responses of K different linear transmission channels.

10. (New) The method according to claim 9, further comprising the step of:
converging toward a solution of a zero forcing block linear estimator for $n \to \infty$.

11. (New) The method according to claim 9, wherein:
symbols $d^{(k)}$ to be transmitted assume values of ± 1 or $\pm i$.

12. (New) The method according to claim 9, wherein:
solution $\hat{\underline{d}}^{T}(n) = A^{H} \cdot \underline{s}^{T}$ of a RAKE receiver is used as the l-st detection solution for starting the iteration.

13. (New) The method according to claim 9, wherein:
a first one of the detection solution for starting the iteration is set to zero.